



# MIOSHA Fact Sheet

## Electrocutions: Prevention/Protection Awareness

MIOSHA identified 63 electrocution fatalities in both general industry and construction in the 10-year period from 2001 through 2010, and investigated 53 of those fatalities which were program related. Although the construction industry accounts for less than 5% of the workforce in Michigan, 60% of the electrocution fatalities investigated by MIOSHA in 2001 thru 2010 were in the construction industry.

With the proper training and the proper equipment, electrocutions can be prevented!

### Recent Electrocutions in Michigan

#### Construction Electrocutions

- **09/23/08 – Scott Maxwell, Age 44** – T.S. Max Poured Walls. Maxwell was electrocuted when the boom truck he was operating contacted a 7200 volt overhead power line.
- **09/08/09 – Cedrick Miller, Age 43** – Detroit Dismantling Company. Miller was electrocuted by a 120 volt energized electrical line while breaking into a wall with a crow bar.
- **09/25/09 – Mike Jones, Age 56** – Mike Jones Well and Pump Service. Jones contacted a 120 volt energized electrical line while repairing a water pump.
- **07/29/10 – William Ryan, Age 49** – Flotation Docking Systems, Inc. Ryan was welding metal plates onto a floating dock. An autopsy revealed the probable cause of death was electrocution.
- **05/10/07 - Jesse Ryerson, Age 33** – Guilford's Seamless Eavestrough's. Ryerson was carrying a 28 foot aluminum extension ladder in the upright position that contacted an overhead line.

#### General Industry Electrocutions

- **04/15/10 – Kevin James, Age 41** – AT&T. James was conducting maintenance on a telephone line. He was electrocuted when he contacted a 4800 volt primary electrical line.

- **06/29/10 – Isidro Perez-Ramirez, Age 28** – Lennard Ag Company. Perez-Ramirez was electrocuted while picking weeds in a field near 480 volt irrigation equipment that was suspected of having lightning damage.
- **08/17/10 – Earl Walter Howell Jr., Age 33** – Autumn Woods. Howell was discovered on the roof near a 480 volt air conditioning unit by another employee, and appeared to have been electrocuted.
- **08/21/10 – Pat Underhill, Age 46** – High Grade Materials Company. A conveyer Underhill was working on was raised to allow access and came in contact with a 4600 volt power line.
- **5/31/2009 – Robert Jenkins, Age 38** – Guardian Fiberglass. Jenkins was possibly electrocuted while holding an electrode in one hand and a pipe in the other. There was no guard over exposed live parts.

While nothing can ever replace a life lost – one way to honor these workers is to thoroughly investigate the circumstances surrounding the incident and use the findings to prevent similar tragedies.

### Electrocution Violations

The MIOASH Act requires employers to provide "a workplace free of recognized hazards that are causing or are likely to cause death or serious physical harm to the employees." The purpose of MIOSHA safety and health rules is to set minimum requirements and provide guidelines for identifying and correcting hazards contributing to injuries, illnesses and fatalities.

Below are some of the rule violations cited by the Construction Safety and Health Division (CSHD) and the General Industry Safety and Health Division (GISHD) as a result of investigating electrocutions.

## Construction Violations

- **Part 1, General Rules**, Rule 114 (1) – Develop and implement an Accident Prevention Program. Rule 115 (4) – Maintain a minimum of 10 feet from energized electrical equipment.
- **Part 10, Lifting and Digging Equipment**, Rule 1023a (1) – Maintain minimum of 10' clearance from energized power line. Rule 1023a (4) – Improper storage of materials under power line.
- **Part 16, Power Transmission and Distribution**, Rule 1627 (1) – Maintain minimum approach distances from energized power lines as shown in Table 1 unless (a) employee is insulated or guarded from energized parts, (b) the energized part is insulated or guarded, or (c) employee is isolated, insulated, or guarded from conductive objects, as during live-line, bare-hand work.
- **Part 17, Electrical Installations**, Rule 1725 (11) – No GFCI in use with portable power tool. Rule 1724 (3) – No lock out or protection from energized electrical equipment.
- **Part 32, Aerial Work Platforms**, Rule 3209 (1) – Aerial work platform not operated with safe distances from energized power lines.

## General Industry Violations

- **Part 39, Design Safety Standards for Electrical Systems**, Rule 1910.303(g) (2) (i) – No guard and inadequate guard over exposed live parts, 110-volts.
- **Part 86, Electric Power Generation, Transmission, and Distribution**, Rule 269(c) – Minimum approach distances from electrical lines were not maintained by the employer.
- **Rule 1910.269(1) (i) (c)** – Employee working alone while performing repair of transformer and electric distribution pole.
- **Part 40, Electrical Safety-Related Work Practices**, Rule 4005(5) – Minimum distances were not maintained under overhead power lines. Rule 4002(2) – Employees at risk of electric shock were not properly trained.
- **Part 85, Control of Hazardous Energy Sources (Lockout/Tagout)**: Rules 1910.147(c)(4) and (c)(7) – lockout procedures and training.

## Preventing Electrocutions

MIOSHA urges proactive attention to safety and health in all workplaces to eliminate these needless deaths. **Effective worker safeguards must be applied at every jobsite.**

The **MIOSHA Consultation Education and Training (CET) Division** has consultants available to provide employers with assistance in creating safety and health programs, developing accident prevention programs, and implementing long-term safety and health solutions. Companies can call the CET Division at 517.322.1809 for consultation services, training opportunities, and other safety and health needs, or visit our website at [www.michigan.gov/cet](http://www.michigan.gov/cet).

The **MIOSHA Training Institute (MTI)** has several courses scheduled for General Industry Safety Standards Part 39 and Part 40, and the Construction Electrical Safety course, "Electricity, The Invisible Killer." All MTI course information is online at [www.michigan.gov/mti](http://www.michigan.gov/mti).

Other resources on electrical hazards are available. CSHD has a fact sheet titled: "**Electrical Incidents – Contact with Power Lines**," on our website at [www.michigan.gov/mioshaconstruction](http://www.michigan.gov/mioshaconstruction). GISHD has a fact sheet titled: "Electrical Shock Hazards," on our website at [www.michigan.gov/mioshageneralindustry](http://www.michigan.gov/mioshageneralindustry).

For information on MIOSHA standards, contact the CSHD at 517.322.1856, GISHD at 517.322.1831, or visit our website, [www.michigan.gov/mioshastandards](http://www.michigan.gov/mioshastandards).

Information is also available from **The National Institute for Occupational Safety and Health (NIOSH)**, [www.cdc.gov/niosh](http://www.cdc.gov/niosh) and the federal **Occupational Safety and Health Administration (OSHA)**, [www.osha.gov](http://www.osha.gov).

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